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ABSTRACT

Technical communicators can act as educators, using their skills at bridging the gap between technology producers and consumers to show people what they can do with the new technology of computer-mediated communication (CMC), which is widely expected to bring about great social change. If CMC is to succeed where television failed at educating and empowering the public, those who implement the technology must be aware of two things: the same people who do not watch public affairs programming on television will not necessarily be interested in such information presented in another medium; and power has its own kind of inertia. CMC has more democratizing potential than television did, but it will not by itself make society more democratic. Unless its users take positive steps to use the medium to increase democracy, its natural tendency will be to reinforce societal structures already present, as the managers and professional employees at a large pharmaceutical corporation that adopted a computer conferencing system learned. True democratic discourse is at least possible through CMC, as it is not through television, because all users, at least potentially, can express their views through CMC. Technical communicators must encourage organizations to change in fact, not merely to give the appearance of having changed. Also, they should investigate the ways that CMC could be made more appealing for political activities, not just electronic games and shopping. (RS)

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Pixel Power:
Making CMC Useful as a Democratic Medium

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The new technology of computer-mediated communication (CMC) is widely expected to bring great social change with it, moving the United States toward a more truly democratic society. The failures of the new technologies of the past, however, show that new technologies put into place without due consideration of how they might best be used tend only to amplify existing societal structures, not to change them. If CMC is to change society for the better, technical communicators must play an active role in the process.

The dawn of every new technology brings with it glamorous promises of how it will revolutionize our lives. Computer-mediated communication (CMC), one aspect of which is the much ballyhooed information superhighway, is no exception. We are told that the information superhighway, or National Information Infrastructure, to call it by its formal name, will do everything from easing traffic congestion by making telecommuting common to improving education by giving inner-city children access to the world's great libraries.

Many of the claims for CMC are obviously unrealistic. Yet, behind all the media hype for the new technologies of CMC—electronic mail and bulletin boards, USENET and Listserv groups, electronic meeting systems, multimedia, virtual reality, and others—there lies a real problem to which CMC could offer some solutions. The United States, a democratic country in principle, sometimes falls short of its democratic ideals.

Segments of the population feel disenfranchised, alienated from the political process. Voter turnouts are low, especially for local elections. Moreover, although all citizens have equal votes, they do not have equal voices or equal access to information. These inequalities result in such phenomena as the disproportionate siting of landfills, incinerators, and hazardous waste facilities in poor or minority areas (Bullard, 1993). In the workplace, inequality is systematic, accepted, and sometimes necessary. Increasingly, however, there are calls for flatter hierarchies and more participation in decision making by employees at lower levels on the organizational chart. These calls translate into demands for more democracy in the workplace. They arise from desires for increased employee satisfaction, increased efficiency and creativity, and from a basic sense of fairness.

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CMC proponents say that CMC will make both government and business more participatory—more democratic—and these promises have some basis in fact. The technology does have the potential to make our society more democratic in many different areas, provided it is properly applied and provided its users want to and use it that way. CMC can spread power more evenly among the participants in an interaction, be they residents of minority neighborhoods, workers on an assembly line, or managers in a meeting room. It can do this by improving access to information and by giving everyone equal power to be heard and to persuade others.

Why should we, as technical communicators, concern ourselves with this issue? Because of the interdisciplinary nature of our field, technical communicators are in the best position to ensure that CMC fulfills its potential. Not only do we work closely with this technology, but we are used to considering the human dimensions of technology, as we do when we design online documentation for a software package or write a pamphlet telling hospital patients what to expect from a CAT scan.

Without action on our part, we cannot expect CMC technology to further democracy merely by virtue of its existence. We have only to look back to the last revolutionary new communication technology—television—for an illustration of what happens when people fail to take control of a new medium.

Television and computers have much in common. Both are electronic technologies, both are now fixtures in our lives, and both arrived to great trumpeting of their potential to change the world for the better. Yet, most people would say that television has not made society significantly more democratic. Considering the fate of television may help us move CMC along a different, more beneficial, route.

Television promised to produce a more democratic society by producing a better educated, more informed populace. Citizen-viewers would use their sets to learn about current affairs, cultural events, political candidates, and issues of public interest. Students would earn college degrees from the comfort of their living rooms. Television would remove all sorts of barriers to the advancement of society. These claims sound familiar to anyone reading about CMC today.

If CMC is to succeed where television failed at educating and empowering the public, those who implement the technology must be aware of two things: First, that the same people who do not watch public affairs programming on television will not necessarily be interested in public affairs information presented in another medium. Even if they are interested, there must be some means for them to act on what they learn. As Langdon Winner (1986) points out, information by itself does not always equal power. Second, we must remember that power has its own kind of inertia. If no special steps are taken to disperse it, it tends to stay where it is. Merely changing a technology has little effect on the distribution of power in a society.

CMC has more democratizing potential than television did, but it will not by itself make society more democratic. Quite the reverse is true—unless its users take positive steps to use the medium to increase democracy, and its creators are prepared to accept the changes it produces, its natural tendency will be to reinforce societal structures already present. One example of this phenomenon in a workplace setting occurred at DrugCorp in the early 1980s.

Shoshana Zuboff (1988) tells a sad tale of corporate intrigue, thrust and parry, surveillance and counterattack, between managers and professional employees at DrugCorp, a large pharmaceutical corporation that adopted a computer conferencing system called DIALOG in 1979. DrugCorp management introduced DIALOG, which incorporated features similar to the USENET news groups, in an attempt to increase innovation by increasing communication among employees.

DIALOG accomplished this goal, breaking down barriers between employees at different levels of DrugCorp's organizational hierarchy or in different divisions of the corporation. DrugCorp professionals moved enthusiastically into DIALOG, transferring their existing oral culture into the new medium. What neither DIALOG's creators nor its users anticipated, though, was the managers' reaction to this culture, a culture to which they previously had not had access. Many managers felt threatened by what they learned through DIALOG. DIALOG participants began to feel they were courting trouble if their messages were too candid. By 1983, the system had changed from a medium for spontaneity and innovation to a medium for recording routine administrative communication.

DrugCorp knew what its DIALOG system was costing it in dollars and in employee-hours, but the corporation was not prepared to measure the system's benefits. The more effective decisions users reported being able to make were unlikely to be quantified, linked back to DIALOG's presence, and weighed against the system's costs. Similarly, the improvement in organizational community spirit wasn't as apparent to most managers as was the quantity and content of non-task-oriented messages employees were generating. The computer did not create the us/them attitude that became apparent as DIALOG spread, but it did exacerbate it.

Marshall Scott Poole and Gerardine DeSanctis (1990) are correct in calling for an examination of the circumstances under which a CMC system will operate. CMC will not provide a quick fix for underlying structural or cultural problems within an organization or a society—as DrugCorp learned—and merely to assume that CMC technology will always produce beneficial effects is technological determinism.

CMC advocates often talk about how computers reduce communication anxiety and fear of intimidation by higher-ups. Unfortunately, a CMC system without adequate safeguards could give lower level employees a false sense of security. Retaliation can and does occur for information disclosed through non-computer means. This situation

will not change merely because the disclosure occurs by means of a computer. Again, CMC used on top of pre-existing structures only reinforces them.

CMC has some unique features that, properly applied, could send it down a very different road than television. True democratic discourse is at least possible through CMC, as it is not through television, because all users, at least potentially, can express their views through CMC. CMC is interactive as television is not, and this difference can have profound implications. It is possible to exercise power—the power to persuade—through this medium as it is not possible to exercise it through the receiving end of a television set

A second difference between television and CMC is in the way the technology has been controlled. In the case of television, commercial entities have had virtually complete control (community-access cable and PBS excepted) because of the nature of the technology. To broadcast over television, it is necessary to have expensive equipment and difficult-to-obtain broadcasting licenses. To broadcast over CMC only requires a personal computer, telephone line and modem, and the willingness to learn to use the system. Television stations are seldom available for use by the general public, but computer equipment is increasingly available in homes, in the workplace, on college campuses, and through some municipalities.

One or the other of these differences, alone, might not be significant, but both together point to a potential that was never there in the case of television. Not only can people become informed and broadcast their own views through CMC, but they can also use the new medium to organize and so challenge currently existing power structures in society.

It is not a foregone conclusion that such challenges will be made, though. Although the potential for greater democracy through CMC exists in a more fully developed form than it does through television, people may very well decide not to take advantage of it any more than most want to take advantage of the public affairs programming that is available on television now. One of the challenges of the medium will be to create strategies for encouraging people to take full advantage of CMC's capabilities.

Some people, though, have successfully used the medium for activism without benefit of a premeditated strategy to make use of its special features. Laura Gurak (1994) describes how, in 1990, a spontaneous, largely leaderless, seemingly self-perpetuating protest occurred over Lotus Corporation's *Lotus MarketPlace*, a set of CD-ROM disks that the protestors believed contained personal information about them and their households. The protest mushroomed, primarily in cyberspace, as people concerned about their privacy deluged both Lotus and each other with email and posts to news groups. By 1991, the protestors had forced Lotus to withdraw the product before it was ever released.

Perhaps the best role we, as pioneers on the "electronic frontier," can play in encouraging the democratic potential of CMC is to show people that it exists. Dave Hughes, an electronic activist, is already doing so (Rheingold, 1993). Hughes encourages local activist groups to go online, helping them to find inexpensive equipment and providing the expertise to get them started spreading their word through cyberspace. The best-known project Hughes has been associated with is Montana's Big Sky Telegraph, an electronic bulletin board. Big Sky Telegraph supports rural Montana school teachers, women's groups, environmental groups, Native Americans, and others traditionally far from the sources of power.

What lessons can we take away from these examples?

- We must encourage organizations to change in fact, not merely give the appearance of having changed. Internal structures and must change before companies can take advantage of all CMC may have to offer. If organizations use CMC only to amplify existing structures, they may, depending on the quality of the existing structures, only further disaffect workers, especially lower level workers.

- We should investigate ways that CMC could be made more appealing for political activities, not just electronic games and shopping. One way to provide this appeal will be by allowing users to wield real political power through the medium. Many of the claims for CMC's democratizing potential rest on the assumption that people who have no interest in politics on television or in the town hall will develop a taste for it online. This assumption deserves scrutiny, but, given the right presentation, CMC's interactive nature offers a real hope of increased participation in our democracy.

- We can act as educators, using our skills at bridging the gap between technology producers and consumers to show people what they can do with CMC. Altering the course of society can be as simple as showing our neighbors how to use a modem.

As professionals, technical communicators are ethically bound to consider the kind of society we create for future generations. With CMC, we have a window of opportunity now, while the systems are being designed and before the information superhighway is completely paved, to have profound effects upon the way it operates and the kind of world in which our descendants live. Now is the time to act.

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